

U.S.S.N. 10/600,480

Filed: June 30, 2003

AMENDMENT AND RESPONSE TO RESTRICTION REQUIREMENT

Amendment

In the Claims

1-9. (cancelled)

10. (currently amended) A method for making a polymer ~~polymers~~ in a biological system comprising

providing one or more substrates selected from the group consisting of 3-hydroxybutyrate, 3-hydroxypropionate, ~~2-hydroxybutyrate~~, 3-hydroxyvalerate, 4-hydroxybutyrate, 4-hydroxyvalerate, 5-hydroxyvalerate, 3-hydroxyhexanoate, 4-hydroxyhexanoate, and 6-hydroxyhexanoate and other longer chain 3-hydroxyacids containing seven or more carbons,

wherein the biological system is selected from the group consisting of bacteria, yeast, fungi, and plants; wherein the biological system expresses enzymes selected from the group consisting polyhydroxyalkanoate synthase, acyl-CoA transferase, hydroxyacyl CoA transferase, and hydroxyacyl CoA synthetase such that the polymers accumulates a polymer comprising the one or more substrates accumulates, wherein the polymer is selected from the group consisting of poly (3-hydroxypropionate), poly (3-hydroxypropionate-co-5-hydroxyvalerate), poly (3-hydroxybutyrate-co-4-hydroxyvalerate), poly (4-hydroxyvalerate), and poly (5-hydroxyvalerate).

11. (original) The method of claim 10 wherein the organisms express one or more heterologous genes encoding the enzymes.

12. (cancelled)

13. (new) The method of claim 10, wherein the biological system is a bacterium.

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14. (new) The method of claim 10, wherein the biological system is a plant.
15. (new) The method of claim 10, wherein the polymer is poly (3-hydroxypropionate).
16. (new) The method of claim 10, wherein the polymer is poly (3-hydroxypropionate-co-5-hydroxyvalerate).
17. (new) The method of claim 10, wherein the polymer is poly (3-hydroxybutyrate-co-4-hydroxyvalerate).
18. (new) The method of claim 10, wherein the polymer is poly (4-hydroxyvalerate).
19. (new) The method of claim 10, wherein the polymer is poly (5-hydroxyvalerate).